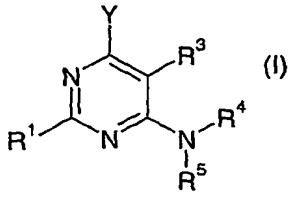
Claims:

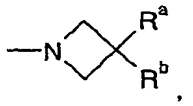
1. A compound having the formula I, or a pharmaceutically acceptable salt thereof,



(I)

wherein

Y is -NH-R^2 or a group of formula



R^1 is cycloalkyl or non-substituted alkyl,

R^2 is cycloalkyl,

R^3 is hydrogen, alkyl, halogen, hydroxy, alkoxy or amino,

or R^2R^3 is an alkylene bridging group,

R^a is hydrogen, alkyl, alkenyl, alkynyl, halogen, hydroxy, alkoxy, amino, alkylamino, alkylsulfonyloxy, cyano, carboxy, ester or amido,

R^b is hydrogen, alkyl or halogen,

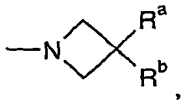
or R^aR^b is carbonyl,

R^4 is hydrogen or alkyl,

R^5 is cycloalkyl, arylalkyl or heterocycle-alkyl,

or NR^4R^5 is a heterocycle, which may be substituted, containing only one heteroatom which is a nitrogen atom or containing two heteroatoms wherein one is a nitrogen atom and the other is a non-oxidized sulfur atom,

with the proviso that when Y is -NHR^2 and R^2R^3 is an alkylene bridging group or when Y is a group of formula



R^1 is a cycloalkyl.

2. A compound according to claim 1 wherein Y is -NH-R^2.

3. A compound according to claim 2 wherein

R^1 is C3-7-cycloalkyl or non-substituted alkyl,

R^2 is C3-7-cycloalkyl,

R^3 is hydrogen, C1-4-alkyl, halogen, hydroxy, alkoxy or amino,

or R^2R^3 is a C2-4-alkylene bridging group,

R^4 is hydrogen or C1-4-alkyl,

R^5 is C3-7-cycloalkyl, arylalkyl or heterocycle-alkyl,

or NR^4R^5 is a heterocycle, which may be substituted, containing only one heteroatom which is a nitrogen atom or containing two heteroatoms wherein one is a nitrogen atom and the other is a non-oxidized sulfur atom.

4. A compound according to claim 2 or 3 wherein R^1 is C3-4-alkyl or C3-5-cycloalkyl, preferably cyclopropyl, isopropyl, cyclobutyl, cyclopentyl, 2-methyl-cyclopropyl or cyclopropylmethyl.

5. A compound according to any of claims 2 to 4 wherein

R^2 is a C3-4-non-substituted cycloalkyl, or a cycloalkyl substituted by a C1-6-alkyl or an aryl, preferably cyclopropyl or cyclobutyl,

and/or R^3 is hydrogen, methyl, ethyl, a Cl atom, a F atom, a Br atom, amino or methoxy,

or R^2R^3 is an alkylene bridging group selected from ethylene, propylene and butylene.

6. A compound according to any of claims 2 to 5 wherein

R^4 is hydrogen or C1-4-alkyl, preferably hydrogen or methyl,

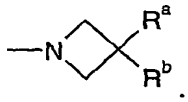
and/or R^5 is 2-(2-thienyl)ethyl, 2-furylmethyl, 2-thienylmethyl, 4-pyridinylmethyl, benzyl, 2-(methylsulfanyl)benzyl, 2,6-difluorobenzyl, 2-fluorobenzyl, 2-nitrobenzyl, 3,5-bis(trifluoromethyl)benzyl, 3,5-difluorobenzyl, cyclohexyl, cycloheptyl, 4-methylcyclohexyl, or 2,2-diphenylethyl,

or NR^4R^5 is 1,3-thiazolidin-3-yl, 1-azepanyl, 1-azocanyl, 3,5-dimethyl-1-piperidinyl, 4-(2-methoxyphenyl)-1-piperidinyl, 4-(hydroxy(diphenyl)methyl)-1-piperidinyl, 4-(trifluoromethyl)-1-piperidinyl, 4,4-difluoro-1-piperidinyl, 4,4-dimethyl-1-piperidinyl, 4-carbamoyl-1-piperidinyl, 4-benzyl-1-piperidinyl, 4-carboxy-1-piperidinyl, 4-cyano-4-phenyl-1-piperidinyl, 4-ethoxycarbonyl-1-piperidinyl, 4-ethyl-1-piperidinyl, 4-ethyl-4-methyl-1-piperidinyl, 4-hydroxy-1-

piperidinyl, 4-hydroxy-4-phenyl-1-piperidinyl, 4-hydroxymethyl-1-piperidinyl, 4-methyl-1-piperidinyl, 4-methylene-1-piperidinyl, 4-oxo-1-piperidinyl, 3,6-dihydro-1(2H)-pyridinyl, 3-azabicyclo[3.2.1]oct-3-yl, 4-thiomorpholinyl, 2-one-1-azepanyl, 3,4-dihydro-2(1H)-isoquinolinyl, 1,4-dioxa-8-azaspiro[4.5]dec-8-yl, 1,3,3-trimethyl-6-azabicyclo[3.2.1]oct-6-yl, octahydro-2(1H)-isoquinolinyl or 8-azaspiro[4.5]dec-8-yl.

7. A compound selected from 6-(1-azepanyl)-N,2-dicyclopropyl-5-methyl-4-pyrimidinamine; N,2-dicyclopropyl-6-(4,4-dimethyl-1-piperidinyl)-5-methyl-4-pyrimidinamine; N,2-dicyclopropyl-5-methyl-6-(4-methyl-1-piperidinyl)-4-pyrimidinamine; 6-(3-azabicyclo[3.2.1]oct-3-yl)-N,2-dicyclopropyl-5-methyl-4-pyrimidinamine; N,2-dicyclopropyl-5-methyl-6-(4-thiomorpholinyl)-4-pyrimidinamine; 4-azepan-1-yl-2-cyclopropyl-5,6,7,8-tetrahydro-pyrido[2,3-d]pyrimidine and 4-azepan-1-yl-2-cyclopropyl-6,7,8,9-tetrahydro-pyrimido[4,5-b]azepine, or pharmaceutically acceptable salts thereof.

8. A compound according to claim 1 wherein Y is a group of formula



9. A compound according to claim 8 wherein NR^4R^5 is a 5- to 9-membered heterocycle, which may be substituted, containing only one heteroatom which is a nitrogen atom or containing two heteroatoms wherein one is a nitrogen atom and the other is a non-oxidized sulfur atom, preferably 1-azepanyl.

10. A compound according to claim 9 wherein

R^1 is C3-7-cycloalkyl,

R^3 is hydrogen, C1-4-alkyl, halogen, hydroxy, alkoxy or amino,

R^a is hydrogen, C1-4-alkyl, C2-6-alkenyl, C2-6-alkynyl, halogen, hydroxy, alkoxy, amino, alkylamino, alkylsulfonyloxy, cyano, carboxy, ester or amido,

R^b is hydrogen, C1-4-alkyl or halogen,

or R^aR^b is carbonyl.

11. A compound according to any of claims 8 to 10 wherein R^1 is C3-4-cycloalkyl, preferably cyclopropyl.

12. A compound according to any of claims 8 to 11 wherein R^3 is hydrogen or C1-4-alkyl, preferably hydrogen or methyl.

13. A compound according to any of claims 8 to 12 wherein
R^a is hydrogen, methyl, hydroxy, methoxy, methylsulfonyloxy, a Br atom, a F atom or cyano, preferably, hydrogen, methyl, hydroxy or a F atom,
and/or R^b is hydrogen or methyl, preferably hydrogen,
or R^aR^b is carbonyl.

14. A compound selected from 1-(6-azetidin-1-yl-2-cyclopropyl-5-methylpyrimidin-4-yl)azepane and 1-[2-cyclopropyl-5-methyl-6-(3-methylazetidin-1-yl)pyrimidin-4-yl]azepane, or pharmaceutically acceptable salts thereof.

15. A compound according to any preceding claims as a pure enantiomer.

16. A pharmaceutical composition comprising an effective amount of a compound according to any preceding claim in combination with a pharmaceutically acceptable diluent or carrier.

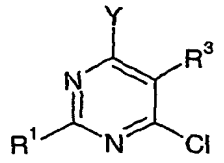
17. A pharmaceutical composition according to claim 16 for administration by inhalation.

18. A compound according to any of claims 1-15 or a pharmaceutically acceptable salt thereof for use as a medicament.

19. The use of a compound according to any of claims 1-15 for the manufacture of a medicament for the treatment of respiratory disorders in connection with Chronic Obstructive Pulmonary Disease or for treatment of symptoms related to chronic bronchitis, emphysema, cough, cystic fibrosis, pulmonary fibrosis, adult respiratory distress syndrome, rhinitis or asthma.

20. A method for treating respiratory disorders in connection with Chronic Obstructive Pulmonary Disease or for treating symptoms related to chronic bronchitis, emphysema, cough, cystic fibrosis, pulmonary fibrosis, adult respiratory distress syndrome, rhinitis or asthma comprising administering at least one compound according to claims 1-15 or a pharmaceutically acceptable salt thereof to a patient.

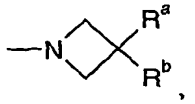
21. A compound of formula II, or a pharmaceutically acceptable salt thereof,



(II)

wherein

Y is -NH-R^2 or a group of formula



R^1 is cycloalkyl or non-substituted alkyl,

R^2 is cycloalkyl,

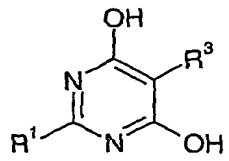
R^3 is hydrogen, alkyl, halogen, alkoxy or hydroxy,

R^a is hydrogen, alkyl, alkenyl, alkynyl, halogen, hydroxy, alkoxy, amino, alkylamino, alkylsulfonyloxy, cyano, carboxy, ester or amido,

R^b is hydrogen, alkyl or halogen,

or R^aR^b is carbonyl.

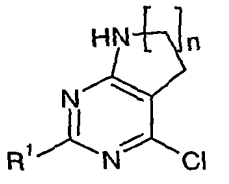
22. A compound of formula VI, or a pharmaceutically acceptable salt thereof,



(VI)

wherein R^1 is C3-5-cycloalkyl or non-substituted alkyl, and R^3 is alkoxy.

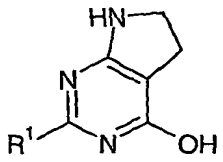
23. A compound of formula X, or a pharmaceutically acceptable salt thereof,



(X)

wherein n is 1-6, and R^1 is cycloalkyl.

24. A compound of formula XII, or a pharmaceutically acceptable salt thereof,



(XII)

wherein R^1 is cycloalkyl.

25. A compound selected from the group consisting of 6-chloro-N,2-dicyclopropyl-5-fluoro-4-pyrimidinamine; 6-chloro-N,2-dicyclopropyl-4-pyrimidinamine; 6-chloro-N,2-dicyclopropyl-5-methyl-4-pyrimidinamine; 5,6-dichloro-N,2-dicyclopropyl-4-pyrimidinamine; 6-chloro-N,2-dicyclopropyl-5-methoxy-4-pyrimidinamine; 6-chloro-N,2-dicyclopropyl-5-ethyl-4-pyrimidinamine; N-[6-chloro-2-(2-trans-methylcyclopropyl)-4-pyrimidinyl]-N-cyclopropylamine and its enantiomers; 6-chloro-N-cyclopropyl-5-methyl-2-(2-trans-methylcyclopropyl)-4-pyrimidinamine; 6-chloro-N-cyclopropyl-5-methyl-2-(2-cis-methylcyclopropyl)-4-pyrimidinamine; N-[6-chloro-2-(cyclopropylmethyl)-5-methyl-4-pyrimidinyl]-N-cyclopropylamine; 6-chloro-2-cyclobutyl-N-cyclopropyl-5-methyl-4-pyrimidinamine; 6-chloro-N,2-dicyclopropyl-5-nitro-4-pyrimidinamine; 6-chloro-N-cyclobutyl-2-cyclopropyl-5-methyl-4-pyrimidinamine; 6-chloro-N-cyclopropyl-2-isopropyl-5-methyl-4-pyrimidinamine; 6-chloro-2-cyclopentyl-N-cyclopropyl-5-methyl-4-pyrimidinamine; 6-chloro-2-cyclopropyl-5-methyl-N-(2-methylcyclopropyl)-4-pyrimidinamine; 6-chloro-2-cyclopropyl-5-methyl-N-(1-methylcyclopropyl)-4-pyrimidinamine; 6-chloro-2-cyclopropyl-5-methyl-N-(2-phenylcyclopropyl)-4-pyrimidinamine; 4-(1-azetidinyl)-6-chloro-2-cyclopropyl-5-methylpyrimidine; 4-(1-azetidinyl)-6-chloro-2-cyclopropylpyrimidine; 4-chloro-2-cyclopropyl-5-methyl-6-(3-methyl-1-azetidinyl)pyrimidine; 4-chloro-2-cyclopropyl-6-(3-methyl-1-azetidinyl)pyrimidine; 4-chloro-2-cyclopropyl-6-(3,3-dimethyl-1-azetidinyl)-5-methylpyrimidine; 1-(6-chloro-2-cyclopropyl-5-methyl-4-pyrimidinyl)-3-azetidinol; 4-chloro-2-cyclopropyl-6-(3-fluoro-1-azetidinyl)-5-methylpyrimidine; 4-chloro-2-cyclopropyl-6-(3-fluoro-1-azetidinyl)pyrimidine; 4-chloro-2-cyclopropyl-6-(3-methoxy-1-azetidinyl)-5-methylpyrimidine; 2-methylcyclopropanecarboximidamide; 2-cyclopropyl-5-fluoro-4,6-pyrimidinediol; 5-chloro-2-cyclopropyl-4,6-pyrimidinediol; 2-cyclopropyl-5-methoxy-4,6-pyrimidinediol; 2-cyclopropyl-5-ethyl-4,6-pyrimidinediol; 2-(2-methylcyclopropyl)-4,6-pyrimidinediol; 5-methyl-2-(2-methylcyclopropyl)-4,6-pyrimidinediol; 2-(cyclopropylmethyl)-5-methyl-4,6-pyrimidinediol; 2-cyclobutyl-5-methyl-4,6-pyrimidinediol; 2-isopropyl-5-methyl-4,6-pyrimidinediol; 2-cyclopentyl-5-methyl-4,6-pyrimidinediol; [3-(2-cyclopropyl-

4,6-dihydroxy-pyrimidin-5-yl)-propyl]-carbamic acid tert-butyl ester; [4-(2-cyclopropyl-4,6-dihydroxy-pyrimidin-5-yl)-butyl]-carbamic acid tert-butyl ester; 4,6-dichloro-2-cyclopropyl-5-fluoropyrimidine; 4,5,6-trichloro-2-cyclopropylpyrimidine; 4,6-dichloro-2-cyclopropyl-5-pyrimidinyl methyl ether; 4,6-dichloro-2-cyclopropyl-5-ethylpyrimidine; 4,6-dichloro-2-(2-methylcyclopropyl)pyrimidine; 4,6-dichloro-5-methyl-2-(2-methylcyclopropyl)pyrimidine; 4,6-dichloro-2-(cyclopropylmethyl)-5-methylpyrimidine; 4,6-dichloro-2-cyclobutyl-5-methylpyrimidine; 4,6-dichloro-2-isopropyl-5-methylpyrimidine; 4,6-dichloro-2-cyclopentyl-5-methylpyrimidine; 6-(1-azepanyl)-N,2-dicyclopropyl-5-nitro-4-pyrimidinamine; 4-chloro-2-cyclopropyl-6,7-dihydro-5H-pyrrolo[2,3-d]pyrimidine; 4-chloro-2-cyclopropyl-5,6,7,8-tetrahydro-5H-pyrido[2,3-d]pyrimidine; 4-chloro-2-cyclopropyl-6,7,8,9-tetrahydro-5H-pyrimido[4,5-b]azepine; 2-cyclopropyl-6,7-dihydro-5H-pyrrolo[2,3-d]pyrimidin-4-ol; 3-fluoroazetidine hydrochloride and 1-benzhydryl-3-fluoroazetidine.